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AEROSPACE MATERIAL SPECIFICATION

AMS 3840B
Superseding AMS 3840A

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FABRIC, ASBESTOS
Polytetrafluoroethylene Impregnated, Sintered

1. SCOPE:

1.1 Form: This specification covers one type of asbestos fabric impregnated with polytetrafluoroethylene in the form of woven sheet or strip or of braided tubing.

1.2 Application: Primarily for parts, such as flexible rub strips, gaskets, and air seals, requiring long-term heat resistance up to 260°C (500°F).

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods

2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19120.

ASTM D299 - Asbestos Yarns

2.3 U.S. Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Military Standards:

MIL-STD-794 - Parts and Equipment, Procedures for Packaging and Packing of

3. TECHNICAL REQUIREMENTS:

3.1 Material and Fabrication: The fabric shall be made from selected long-fiber, grade A or better, chrysotile asbestos yarn (Ref. ASTM D299), woven or braided into the desired form with no metallic reinforcement, impregnated with approximately an equal weight of polytetrafluoroethylene, and thermally sintered.

3.1.1 Color: Shall be light grey to dark brown.

3.2 Properties: The fabric shall conform to the following requirements; tests shall be performed on the fabric supplied and in accordance with specified methods:

3.2.1 Weight Loss at 480°C (900°F), based on original dry weight	45 - 65%	4.5.1
3.2.2 Brittleness After Sintering	Bend flat with no breaks in fabric	4.5.2

3.2.3 Weather Resistance: When specified, the fabric shall have weather resistance acceptable to purchaser, determined by a procedure agreed upon by purchaser and vendor.

3.2.4 Corrosion: The fabric shall not have a corrosive effect on other materials when exposed to conditions normally encountered in service. Ø Discoloration of metals shall not be considered objectionable. Method of test and acceptance standards shall be as agreed upon by purchaser and vendor.

3.3 Quality: Fabric, as received by purchaser, shall be uniform in quality and Ø condition, clean, sound, and free from foreign materials and from imperfections detrimental to usage of the fabric.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection: The vendor of the fabric shall supply all samples for vendor's tests and shall be responsible for performing all Ø required tests. Results of such tests shall be reported to the purchaser as required by 4.6. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the fabric conforms to the requirements of this specification.

4.2 Classification of Tests:

4.2.1 Acceptance Tests: Tests to determine conformance to requirements for Ø weight loss (3.2.1) and brittleness after sintering (3.2.2) are classified as acceptance tests and shall be performed on each lot.

4.2.2 Preproduction Tests: Tests to determine conformance to all technical requirements of this specification are classified as preproduction tests Ø and shall be performed prior to or on the initial shipment of fabric to a purchaser, when a change in material or processing, or both, requires reapproval as in 4.4.2, and when purchaser deems confirmatory testing to be required.

4.2.2.1 For direct U.S. Military procurement, substantiating test data and, when Ø requested, preproduction test material, shall be submitted to the cognizant agency as directed by the procuring activity, the contracting officer, or the request for procurement.

4.3 Sampling: Shall be as follows:

4.3.1 For Acceptance Tests: Sufficient fabric shall be taken at random from Ø each lot to perform all required tests; the number of determinations for each requirement shall be as specified in the applicable test procedure or, if not specified therein, not less than three.

4.3.1.1 A lot shall be all fabric produced in a single production run from the same batches of raw materials under the same fixed conditions and presented for vendor's inspection at one time.

4.3.1.2 When a statistical sampling plan and acceptance quality level (AQL) have Ø been agreed upon by purchaser and vendor, sampling shall be in accordance with such plan in lieu of sampling as in 4.3.1 and the report of 4.6.1 shall state that such plan was used.

4.3.2 For Preproduction Tests: As agreed upon by purchaser and vendor. Ø

4.4 Approval:

4.4.1 Sample fabric shall be approved by purchaser before fabric for production use is supplied, unless such approval be waived by purchaser. Results of tests on production fabric shall be essentially equivalent to those on the approved sample.

4.4.2 Vendor shall use ingredients, manufacturing procedures, processes, and methods of inspection on production fabric which are essentially the same as those used on the approved sample fabric. If necessary to make any change in ingredients, in type of equipment for processing, or in manufacturing procedures, vendor shall submit for reapproval a statement of the proposed changes in material or processing, or both, and, when requested, sample fabric. Production fabric made by the revised procedure shall not be shipped prior to receipt of reapproval.

4.5 Test Methods:

4.5.1 Weight Loss: Place a 2-g ± 0.1 sample in a tared crucible and heat at 105°C ± 1 (220°F ± 2) to constant weight (original dry weight) at room temperature. Heat the crucible and contents to 315°C ± 5 (600°F ± 10), hold at heat for 24 hr ± 0.3, cool in a desiccator, and reweigh. Reheat the crucible and contents to 480°C ± 15 (900°F ± 25), hold at heat for 3 hr ± 0.3, cool, weigh, and calculate the weight loss during the 480°C (900°F) heating.

4.5.2 Brittleness: Heat a specimen to 315°C ± 5 (600°F ± 10) and hold at heat for 24 hr ± 0.3. Transfer the specimen to an oven which is at 385°C ± 15 (725°F ± 25), hold at heat for 60 min. ± 5, and quench in water. Bend the specimen flat on itself. Samples of tubing shall be split open and bent with the outside surface of the tube on the inside of the bend.

4.6 Reports:

4.6.1 Ø The vendor of the fabric shall furnish with each shipment a report showing the results of tests to determine conformance to the acceptance test requirements and stating that the fabric conforms to the other technical requirements of this specification. This report shall include the purchase order number, AMS 3840B, lot number, vendor's material designation, form, size, and quantity.

4.6.2 The vendor of finished or semi-finished parts shall furnish with each shipment a report showing the purchase order number, AMS 3840B, contractor or other direct supplier of fabric, supplier's material designation, part number, and quantity. When fabric for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of fabric to determine conformance to the requirements of this specification and shall include in the report either a statement that the fabric conforms or copies of laboratory reports showing the results of tests to determine conformance.

4.7 Resampling and Retesting: If any specimen used in the above tests fails to meet the specified requirements, disposition of the fabric may be based on the results of testing three additional specimens for each original nonconforming specimen. Failure of any retest specimen to meet the specified requirements shall be cause for rejection of the fabric represented and no additional testing shall be permitted. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY:

5.1 Packaging and Identification:

5.1.1 Packaging shall be accomplished in such a manner as to ensure that the fabric, during shipment and storage, will be protected from exposure to weather or any other normal hazard.